

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-2. (Cancelled)

3. (Currently Amended) ~~The rejection system of claim 2~~ A cosite interference rejection system comprising:

an interference subsystem coupled to a transmit system, the interference subsystem weighting a sampled transmit signal based on a feedback signal such that the weighted signal is out of phase with the sampled transmit signal;

an optical cancellation subsystem coupled to the interference subsystem and a receive antenna, the optical cancellation subsystem converting an optical signal into a desired receive signal based on an interfering coupled signal and the weighted signal;
and

a feedback loop for providing the feedback signal to the interference subsystem based on the desired receive signal;

wherein the optical cancellation subsystem includes:

an optical source for generating the optical signal;

a modulation network coupled to the optical source, the receive antenna, and the interference subsystem, the modulation network phase modulating the optical signal based on the interfering coupled signal and the weighted signal; and

a demodulation system coupled to the modulation network and the feedback loop, the demodulation system demodulating the phase modulated optical signal;

wherein the modulation network includes:

a first modulator coupled to the optical source and the receive antenna, the first modulator phase modulating the optical signal based on the interfering coupled signal;

a second modulator coupled to the interference subsystem, the second modulator phase modulating the optical signal based on the weighted signal; and

a fiber optic subsystem for transferring the optical signal from the first modulator to the second modulator.

4. (Original) The rejection system of claim 3 wherein the first modulator is remotely located from the second modulator.

5. (Currently Amended) The rejection system of claim 4 wherein the rejection system is fixed to an aircraft, the first modulator and the second modulator being ~~position~~positioned to obtain a desired weight distribution within the aircraft.

6. (Currently Amended) The rejection system of claim ~~[[2]]~~ 3 wherein the optical source ~~is~~comprises a laser.

7. (Currently Amended) The rejection system of claim [[1]] 3 wherein power transmitted by the transmit system is coupled to the receive antenna.

8. (Currently Amended) The rejection system of claim [[1]] 3 wherein the interference subsystem includes:

an amplifier for amplifying the sampled transmit signal; and

an amplitude and phase module for weighting the sampled transmit signal.

9. (Currently Amended) The rejection system of claim [[1]] 3 wherein the feedback loop includes a coupler for sampling the desired receive signal.

10. (Currently Amended) The rejection system of claim [[1]] 3 further including a low noise amplifier for amplifying the desired receive signal.

11. (Cancelled)

12. (Currently Amended) ~~The cancellation subsystem of claim 11~~ An optical cancellation subsystem for a cosite interference rejection system, the optical cancellation subsystem comprising:

an optical source for generating an optical signal;

a modulation network coupled to the optical source, a receive antenna, and an interference subsystem, the modulation network phase modulating the optical signal

based on an interfering coupled signal from the receive antenna and a weighted signal from the interference subsystem; and

a demodulation system coupled to the modulation network, the demodulation system demodulating the phase modulated optical signal to generate a desired receive signal;

wherein the modulation network includes:

a first modulator coupled to the optical source and the receive antenna, the first modulator phase modulating the optical signal based on the interfering coupled signal;

a second modulator coupled to the interference subsystem, the second modulator phase modulating the optical signal based on the weighted signal; and

a fiber optic subsystem for transferring the optical signal from the first modulator to the second modulator.

13. (Original) The cancellation subsystem of claim 12 wherein the first modulator is remotely located from the second modulator.

14. (Original) The cancellation subsystem of claim 13 wherein the cancellation subsystem is fixed to an aircraft, the first modulator and the second modulator being positioned to obtain a desired weight distribution within the aircraft.

15. (Currently Amended) The cancellation subsystem of claim 10 wherein the optical source ~~is~~ comprises a laser.

16-17. (Cancelled)

18. (Currently Amended) ~~The method of claim 17 further including~~ A method for rejecting cosite interference, the method comprising the steps of:

weighting a sampled transmit signal based on a feedback signal such that the weighted signal is out of phase with the sampled transmit signal;

converting an optical signal into a desired receive signal based on an interfering coupled signal and the weighted signal;

generating the feedback signal based on the desired receive signal;

generating the optical signal;

phase modulating the optical signal based on the interfering coupled signal and the weighted signal;

demodulating the phase modulated optical signal;

phase modulating the optical signal with a first phase modulator based on the interfering coupled signal;

transferring the optical signal to a second phase modulator with a fiber optic subsystem; and

phase modulating the optical signal with the second phase modulator based on the weighted signal.

19. (Original) The method of claim 18 further including the step of generating the optical signal with a single wavelength laser.